

WHAT IS CLAIMED IS:

1. A phosphor excited by a vacuum ultraviolet ray provided with a green light emitting phosphor when excited by the vacuum ultraviolet ray, the phosphor consisting

5 essentially of a composition expressed by

a general formula:  $L_{1-x}Tb_xAl_3(BO_3)_4$

(In the formula, L denotes at least one of element selected from Y and Gd, and x is a number satisfying  $0.1 < x \leq 0.7$ ).

2. The phosphor excited by the vacuum ultraviolet ray according to claim 1:

wherein the value of x expressing the content of the Tb satisfies in the range of  $0.2 \leq x \leq 0.6$ .

3. The phosphor excited by the vacuum ultraviolet ray according to claim 1:

15 wherein 50 atomic percent or more of the L element is Gd.

4. The phosphor excited by the vacuum ultraviolet ray according to claim 1:

20 wherein the phosphor possesses a crystal structure of a rhombohedral system.

5 The phosphor excited by the vacuum ultraviolet ray according to claim 1:

25 wherein the phosphor emits a green light with a value of x in the range of 0.28 to 0.34, and a value of y in the range of 0.57 to 0.60 in CIE chromaticity value (x, y), when irradiated with the vacuum ultraviolet ray of 200 nm or less in wavelength.

6. The phosphor excited by the vacuum ultraviolet ray

according to claim 1:

wherein the phosphor is used as the green light emitting phosphor for a rare gas discharge lamp.

7. The phosphor excited by the vacuum ultraviolet ray according to claim 1:

wherein the phosphor is used as the green light emitting phosphor for a plasma display panel.

8. A phosphor excited by a vacuum ultraviolet ray provided with a green light emitting phosphor when excited by the vacuum ultraviolet ray, the phosphor consisting essentially of a composition expressed by

a general formula:  $L_{1-x-y}Tb_xCe_yAl_3(BO_3)_4$   
(In the formula, L denotes at least one of element selected from Y and Gd, and x and y are numbers satisfying  $0.1 < x \leq 0.7$ , and  $0.00001 \leq y \leq 0.01$ ).

9. The phosphor excited by the vacuum ultraviolet ray according to claim 8:

wherein the value of x expressing the content of the Tb satisfies in the range of  $0.2 \leq x \leq 0.6$ .

10. The phosphor excited by the vacuum ultraviolet ray according to claim 8:

wherein the phosphor possesses a crystal structure of a rhombohedral system.

11. A light emitting apparatus, comprising:  
a green light emitting phosphor excited by a vacuum ultraviolet ray according to claim 1.

12. The light emitting apparatus, comprising:  
a green light emitting phosphor excited by a vacuum

ultraviolet ray according to claim 8.

13. The light emitting apparatus according to claim 11:  
wherein the light emitting apparatus includes a rare  
gas discharge lamp, the rare gas discharge lamp comprising;

- 5       a light emitting layer containing a mixture of the  
green light emitting phosphor excited by the vacuum  
ultraviolet ray, a blue light emitting phosphor and a red  
light emitting phosphor, and  
means for irradiating the light emitting layer with the  
10 vacuum ultraviolet ray.

14. The light emitting apparatus according to claim 11:  
wherein the light emitting apparatus includes a plasma  
display panel, the plasma display panel comprising;

- 15       a light emitting layer having the green light emitting  
phosphor excited by the vacuum ultraviolet ray, a blue light  
emitting phosphor and a red light emitting phosphor, and  
means for irradiating the light emitting layer with the  
vacuum ultraviolet ray.